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BULLETIN

OF THE

TORREY BOTANICAL CLUB

SEPTEMBER, 1916

Studies of West Indian plants—VIII

NATHANIEL LORD BRITTON

44. FURTHER RECORDS OF JAMAICA SEDGES *

CYPERUS FUGAX Liebm. Vid. Selks. Skr. V. 2: 196. 1851

Savanna, Belle Vue, near Spanish Town (*Harris 12183*).

DISTRIBUTION: Mexico and Guatemala.

CYPERUS CYPEROIDES (L.) Kuntze, Rev. Gen. Pl. 3²: 333. 1898

Scirpus cyperoides L. Mant. 181. 1771.

Maviscus Sieberianus Nees, Linnaea 9: 286. 1834.

Maviscus cyperoides Urban, Symb. Ant. 2: 164. 1900. Not *M. cyperoides* A. Dietr.

Belle Vue, near Spanish Town, in wet hollows in pastures (*Harris 12045*); previously collected in Jamaica by Hart and by Wulfschlaegel.

DISTRIBUTION: Trinidad. Native of the Old World tropics.

CYPERUS NANUS Willd.

In Bull. Dept. Agric. Jamaica 5: Suppl. 1, 9, I noted Mr. C. B. Clarke's record of this species from Jamaica, as based on the same specimen (*March 13*) as his record of *Mariscus gracilis* Vahl (*Cyperus granularis* [Desf.] Britton), and I subsequently ascertained that this specimen preserved in the Kew herbarium is

* Bull. Dept. Agric. Jamaica 5: Suppl. 1. 1907. Bull. Torrey Club 35: 568, 569. 1909. *Ibid.* 41: 1, 2. 1914.

[The BULLETIN for August (43: 397-440. pl. 22, 23) was issued August 22, 1916.]

C. granularis. It would therefore appear that *C. nanus* was entered as Jamaican by Mr. Clarke in error. *C. granularis* on the other hand is now known to me to inhabit dry soil at Long Acre Point near Black River (*Britton 1383*).

***Cyperus ignotus* sp. nov.**

Perennial, glabrous; culm rather stout, smooth, bluntly 3-angled, about 5 dm. high. Basal leaves as long as the culm or longer, smooth, 2.5-4 mm. wide, those of the involucre similar, much longer than the inflorescence, sometimes 3 dm. long; umbel compound, its primary rays 8 cm. long or less; spikelets compressed, capitate, 6-8-flowered, the heads numerous, 8-10 mm. in diameter; rachis wingless; scales ovate-lanceolate, mucronulate, very faintly nerved, closely appressed and overlapping, 2 mm. long; style 3-cleft; achene oblong, trigonous, 1.3 mm. long, about twice as long as thick, narrowed at both ends.

In damp, shaded places, near Vinegar Hill, St. George, at about 1,100 m. alt. (*Harris 12350*). Plant with the habit of *C. elegans* L., but with flat leaves and quite different spikelets.

ELEOCHARIS NODULOSA (Roth) Schultes; R. & S. Mant. 2: 87.
1824

Scirpus nodulosus Roth, Nov. Pl. Sp. 29. 1821.

Swamp, Belle Vue near Spanish Town (*Harris 12179*).

DISTRIBUTION: Southern United States; Cuba; Hispaniola; Porto Rico; Antigua; Guadeloupe; continental tropical America.

ELEOCHARIS MICROCARPA Torr. (*E. minima* Kunth), was recorded by Mr. Clarke as collected in Jamaica by Purdie, but his determination of the specimen from the interior of Manchester preserved in the Kew herbarium was subsequently doubted by Mr. Clarke, and we have no other knowledge of the existence of this species in Jamaica.

***Stenophyllus junciformis* (HBK.)**

Isolepis junciformis HBK. Nov. Gen. 1: 222. 1815.

Scirpus juncoides Willd.; Griseb. Fl. Br. W. I. 572. 1864.

Summit of Bull Head Mountain (*Underwood 3364*); Liguanea Ridge, St. Andrew (*Harris 12219, 12345*).

DISTRIBUTION: Cuba; South America.

Owing to two different species having been distributed as *Scirpus juncoides* under C. Wright's Cuban No. 1533, I formerly misidentified Professor Underwood's No. 3364 and recorded it* as *Stenophyllus subaphyllus* (Clarke) Britton, a species apparently restricted to eastern Cuba.

FIMBRISTYLIS MILIACEA (L.) Vahl, Enum. 2: 287. 1806

Savannas and swamps, Belle Vue, near Spanish Town (*Harris 12182, 12188*).

DISTRIBUTION: Southern United States; Cuba; Porto Rico; continental tropical America and Old World tropics.

RYNCHOSPORA OLIGANTHA A. Gray, Ann. Lyc. N. Y. 3: 212. 1835

Hollis savanna, Upper Clarendon (*Harris 12249*).

DISTRIBUTION: Southeastern United States. Not yet detected in Cuban savannas.

RYNCHOSPORA PUSILLA Chapm.; Curtis, Am. Jour. Sci. II. 7: 409. 1849

Rynchospora intermixta C. Wright; Sauvalle, Anales Acad. Habana 8: 88. 1872

Bull Head Mountain, along roadside in wet places (*Harris 12261*).

DISTRIBUTION: Southeastern United States; Santa Clara, Pinar del Rio and Isle of Pines, Cuba.

SCLERIA GRACILIS Ell. Bot. S. C. & Ga. 2: 571. 1824

Bull Head Mountain, 800–900 m. alt., forming small patches on exposed hillside (*Harris 12262*).

DISTRIBUTION: Southeastern United States; Pinar del Rio and Isle of Pines, Cuba.

45. STENOPHYLLUS RAF. IN THE WEST INDIES

Type species: *Scirpus Stenophyllus* Ell. The generic name dates from 1825 (Neog. 4). The name *Bulbostylis*, taken up by Mr. C. B. Clarke for the genus in 1893 (Hook. f. Fl. Brit. India) and subsequently, was first published by Kunth, under *Isolepis*, in 1837 (Enum. 2: 205).

* Bull. Dept. Agric. Jamaica 5: Suppl. 1, 12. 1907.

A. Spikelet solitary.

Spikelet terminal, not subtended by a bract.

Caudex stout, 2-15 cm. high, densely clothed with persistent leaf-bases.

1. *S. paradoxus*.

Caudex none.

Leaves elongated; spikelet straw-color.

2. *S. leucostachys*.

Leaves short; spikelet dark brown.

3. *S. conifera*.

Spikelet apparently lateral, subtended by a bract.

Achene smooth.

4. *S. floccosus*.

Achene papillose-reticulated.

Achene twice as long as thick.

5. *S. portoricensis*.

Achene scarcely longer than thick.

6. *S. curassavicus*.

B. Spikelets (except in depauperate plants) several or numerous.

a. Spikelets in a single capitate cluster.

Plants leafless or nearly so, or leaves 1-3 cm. long.

Spikelets few, 6 mm. long or less.

Leaf-blade 6 mm. long or less.

7. *S. subaphyllus*.

Leaf-blade 1-3 cm. long.

8. *S. alpestris*.

Spikelets several, 6-20 mm. long.

Scales loosely pubescent.

9. *S. Wilsoni*.

Scales glabrous or ciliolate.

10. *S. Tuerckheimii*.

Leaves about one half as long as the culm.

11. *S. fimbriatus*.

b. Spikelets in a simple or compound umbel, or sometimes compact or capitate.

Spikelets clustered in umbelled heads or spikes, or head sometimes solitary.

Culm pilose above.

12. *S. vestitus*.

Culm glabrous.

Scales mucronate by the excurrent midvein.

13. *S. junciformis*.

Scales acute, the midvein not excurrent; achene papillose.

14. *S. antillanus*.

Spikelets not clustered in the umbels, or somewhat clustered.

Achene 0.5 mm. long, gray, densely pitted; scales suborbicular.

15. *S. coarctatus*.

Achene 0.7-1 mm. long, white, transversely undulate; scales ovate.

16. *S. capillaris*.

1. STENOPHYLLUS PARADOXUS (Spreng.) Standley, Contr. U. S. Nat. Herb. 18: 88. 1916

Schoenus paradoxus Spreng. Syst. 1: 190. 1825.*Bulbostylis paradoxa* Linden; Regnell, Cyp. 17. 1900.

TYPE LOCALITY: Mt. Silla de Cacares, near El Pexual, Venezuela.

DISTRIBUTION: Isle of Pines, Cuba: continental tropical America.

One of the noteworthy elements in the vegetation of sandy pine-lands on the Isle of Pines, sometimes occupying areas many acres in extent.

2. **Stenophyllus leucostachyus** (HBK.)

Isolepis leucostachya HBK. Nov. Gen. 1: 220. 1815.

Bulbostylis leucostachya Kunth; Clarke in Urban, Symb. Ant. 2: 85. 1900.

TYPE LOCALITY: Wet woods of the Orinoco at Maypuri.

DISTRIBUTION: West Indies (*Swartz*, according to Clarke): northern South America. Unknown to me from the West Indies.

3. **Stenophyllus coniferus** (Kunth)

Isolepis conifera Kunth, Enum. 2: 206. 1837.

TYPE LOCALITY: Surinam.

DISTRIBUTION: Recorded by Clarke as doubtfully collected by Mayerhoff in Hispaniola: northern South America.

4. **STENOPHYLLUS FLOCCOSUS** (Griseb.) Britton, Torrey 13: 216. 1913

Scirpus floccosus Griseb. Cat. Pl. Cub. 241. 1866.

Bulbostylis floccosa Clarke; Urban, Symb. Ant. 2: 86. 1900.

TYPE LOCALITY: Eastern Cuba.

DISTRIBUTION: Known only from the type locality.

5. **STENOPHYLLUS PORTORICENSIS** Britton, Torrey 13: 216. 1913

TYPE LOCALITY: Rocky coastal thicket near Guanica, Porto Rico.

DISTRIBUTION: Coastal thickets, southwestern Porto Rico.

6. **Stenophyllus curassavicus** Britton, nom. nov.

Bulbostylis floccosa var.(?) *pumilio* Clarke; Urban, Symb. Ant. 5: 290. 1907.

TYPE LOCALITY: Curaçao.

DISTRIBUTION: Banks and limestone rocks, Bonaire and Curaçao.

The spikelets of this species are much compressed. The

varietal name published by Mr. Clarke is not taken up because the plant attains a greater size than his description indicates. The plant is abundant about Willamsted, Curaçao (*Britton & Shafer 2946*).

7. *STENOPHYLLUS SUBAPHYLLUS* (Clarke) Britton, Bull. Dept. Agric. Jamaica 5: Suppl. 1, 12. 1907

Bulbostylis subaphylla Clarke; Urban, Symb. Ant. 2: 86. 1900.

TYPE LOCALITY: Eastern Cuba.

DISTRIBUTION: Eastern Cuba; formerly erroneously attributed by me (*loc. cit.*) to Jamaica (see page 443).

8. *Stenophyllus alpestris* (Urban)

Bulbostylis alpestris Urban, Symb. Ant. 7: 168. 1912.

TYPE LOCALITY: Near Constanza, Santo Domingo, in pine-lands, 2,500 m. alt.

DISTRIBUTION: Known only from the type locality.

9. *STENOPHYLLUS WILSONI* Britton, Torreyana 13: 215. 1913

TYPE LOCALITY: Castle Island, Bahamas.

DISTRIBUTION: Castle Island and Little Inagua, Bahamas.

10. *Stenophyllus Tuerckheimii* (Urban)

Bulbostylis Tuerckheimii Urban, Symb. Ant. 7: 169. 1912.

TYPE LOCALITY: Near Constanza, Santo Domingo, in pine-lands, 1,250 m. alt.

DISTRIBUTION: Known only from the type locality.

11. *Stenophyllus fimbriatus* (Nees)

Oncostylis fimbriata Nees; Martius, Fl. Bras. 2: 88, 1843.

Scirpus Dussii Boeckl. Cyp. Nov. 2: 38. 1890.

Bulbostylis fimbriata Clarke; Urban, Symb. Ant. 2: 87. 1900.

TYPE LOCALITY: River-banks at Villa Rica, Brazil.

DISTRIBUTION: Martinique; Peru; Brazil.

12. *Stenophyllus vestitus* (Kunth)

Isolepis vestita Kunth, Enum. 2: 210. 1837.

Oncostylis vestita Nees; Martius, Fl. Bras. 2: 88. 1843.

Scirpus hirtus Griseb. Cat. Pl. Cub. 241. 1866.

TYPE LOCALITY: Surinam.

DISTRIBUTION: Province of Pinar del Rio, Cuba; western Porto Rico; continental tropical America. The Porto Rico plant was referred by Clarke to *Bulbostylis Langsdorffiana*.

13. *STENOPHYLLUS JUNCIFORMIS* (HBK.) Britton, Bull. Torrey Club 43: 442. 1916

Isolepis junciformis HBK. Nov. Gen. 1: 222. 1815.

Scirpus juncoides Willd.; Griseb. Fl. Br. W. I. 572. 1864.

TYPE LOCALITY: Near the Guachari cavern, 500 feet alt.

DISTRIBUTION: Savannas and pine-lands, province of Pinar del Rio, Cuba; Hispaniola; Jamaica; Trinidad: continental tropical America.

14. *Stenophyllus antillanus* sp. nov.

Culms tufted, nearly filiform, 2-4.5 dm. long, minutely rough-ciliolate or smooth. Leaves filiform, similar to the culm and one half to two thirds its length, rough-ciliolate or smooth, their sheaths pilose. Umbel compact or subcapitate; spikelets few or several, linear, 6-12 mm. long, 1.5 mm. wide, 8-12-flowered; scales ovate, known with a strong, whitish keel, acute, 1.5 mm. long; achene obovoid, nearly white, sharply trigonous, 0.7 mm. long, papillose, tipped by a minute, conic tubercle.

Dominica and Martinique. Type from Grand Savanna, Dominica (*F. E. Lloyd* 822).

Referred by Clarke (in Urban, Symb. Ant. 2: 89. 1900) to *S. capillaris*.

15. *STENOPHYLLUS COARCTATUS* (Ell.) Britton; Small, Fl. SE. U. S. 189. 1903

Scirpus coarctatus Ell. Bot. S. C. & Ga. 1: 83. 1816.

TYPE LOCALITY: Beaufort, South Carolina.

DISTRIBUTION: On a sand pile in Santiago Harbor, Oriente, Cuba, March, 1909; southeastern United States.

16. *STENOPHYLLUS CAPILLARIS* (L.) Britton, Bull. Torrey Club 21: 30. 1894

Scirpus capillaris L. Sp. Pl. 49. 1753.

Bulbostylis capillaris Clarke; Hook. f. Fl. Brit. India 6: 652. 1893.

TYPE LOCALITY: Virginia.

DISTRIBUTION: Sandy and rocky soil, provinces of Oriente and Pinar del Rio and on the Isle of Pines, Cuba; pinelands at high elevations in Santo Domingo; Jamaica (not recently collected): continental North America; temperate South America.

***Stenophyllus tenuifolius* (Rudge).**

Scirpus tenuifolius Rudge, Pl. Guian. 18, pl. 22. 1805.

Scirpus bufonius Poir. Encycl. Suppl. 5: 105. 1817.

Bulbostylis capillaris tenuifolia Clarke; Urban, Symb. Ant. 2: 89. 1900.

Recorded by Clarke as collected by C. Wright in Cuba (*Wright* 3382), but our specimens of that number are not essentially different from *S. capillaris*. The species inhabits tropical South America.

46. GALACTIA P.BR. IN CUBA

Type species: *Glycine Galactia* L.

- A. Corolla 2–2.5 cm. long, the standard parallel with the wings and keel. 1. *G. rudolphioides*.
- B. Corolla not more than 1.7 cm. long, the standard erect, not parallel with the wings and keel.
- a. Twining or trailing vines.
- Corolla about 1.7 cm. long; leaflets 8 mm. long or less; peduncle 1-flowered. 2. *G. minutifolia*.
- Corolla less than 1.5 mm. long; leaflets 1–6 cm. long; peduncles mostly few- to several-flowered.
- Terminal leaflet (when 3) long-stalked.
- Calyx-lobes longer than the tube.
- Inflorescence short, 1- to few-flowered.
- Branches prostrate; calyx loosely pubescent.
- Leaflets 3 or 1, oblong to narrowly linear, 2–10 mm. wide. 3. *G. parvifolia*.
- Leaflet only 1, ovate or elliptic, 10–18 mm. wide. 4. *G. monophylla*.
- Branches suberect; calyx densely villous. 5. *G. suberecta*.
- Inflorescence elongated, several- to many-flowered.
- Leaflets membranous or chartaceous, flat, dull; standard 9–11 mm. long.
- Leaflets oblong to obovate-oblong. 6. *G. Combsii*.
- Leaflets ovate to elliptic or ovate-lanceolate.
- Leaflets membranous; raceme usually long-peduncled. 7. *G. striata*.
- Leaflets chartaceous; raceme short-peduncled or sessile. 8. *G. spiciformis*.
- Leaflets subcoriaceous, revolute-margined, shining; standard 7 mm. long. 9. *G. Earlei*.

- Calyx-lobes shorter than the tube. 10. *G. brachyodon*.
 Leaflets nearly equally short-stalked.
 Leaflets densely or loosely pubescent beneath.
 Leaflets obovate, strongly reticulate-veined,
 loosely pubescent on both sides. 11. *G. Jenningsii*.
 Leaflets linear-oblong, narrowed at both
 ends, densely silky beneath. 12. *G. revoluta*.
 Leaflets glabrous, or with only some scattered
 hairs beneath.
 Flowering pedicels 1-2 mm. long; pod short-
 pilose, its pedicel 3 mm. long. 13. *G. galactioides*.
 Flowering pedicels 0.5 mm. long; pod long-
 pilose, its pedicel 1.5 mm. long or less. 14. *G. savannarum*.
 b. Erect shrub; leaflets 3. 15. *G. Jussiaeana*.

1. GALACTIA RUDOLPHIODES (Griseb.) Benth. & Hook.; Sauvalle,
 Anales Acad. Habana 5: 337. 1869

Dioclea rudolphioides Griseb. Mem. Am. Acad. II. 8: 178. 1860.

Galactia Odonia Griseb. Cat. Pl. Cub. 75. 1866.

Pinelands, thickets and hillsides, Oriente, Matanzas: Bahamas.

2. GALACTIA MINUTIFOLIA Urban, Symb. Ant. 2: 325. 1900

Dry soil, Oriente. Endemic. Referred by Grisebach to
G. parvifolia A. Rich.

3. GALACTIA PARVIFOLIA A. Rich. Ess. Fl. Cub. 414. 1845

Galactia stenophylla Urban, Symb. Ant. 2: 313. 1900. Not H. &
 A.

Galactia parvifolia triphylla Urban, loc. cit. 314. 1900.

Galactia parvifolia heterophylla Urban, loc. cit. 315. 1900.

Galactia parvifolia monophylla Urban, loc. cit. 315. 1900.

Galactia Grisebachii Urban, Symb. Ant. 5: 372. 1908.

Grassy fields and banks at lower elevations, all provinces and
 Isle of Pines: South Florida; Hispaniola. Consists of races differ-
 ing in number, form and size of leaflets.

4. GALACTIA MONOPHYLLA Griseb. Cat. Pl. Cub. 75. 1866

Grassy places, Oriente, Havana; Bahamas.

5. *Galactia suberecta* sp. nov.

A somewhat woody trailing vine, with slender, villous, erect or ascending branches 1–2.5 dm. high. Stipules lanceolate, acute, 2–3 mm. long; petioles slender, villous, 1–2 cm. long; leaflets 3, oblong to oblong-ob lanceolate or oval, 1–3 cm. long, mostly obtuse or rounded at the apex, appressed-pubescent on both sides, strongly reticulate-veined beneath, the lateral ones nearly sessile, obtuse or rounded at the base, the terminal one narrowed at the base, on a petiolule 3–4 mm. long; peduncles 1-flowered, shorter than the petioles; calyx villous, 6 mm. long, its lanceolate lobes longer than the tube; corolla purple, 1 cm. long.

Savanna near San Juan, Isle of Pines, Cuba (*Britton & Wilson 14973*).

6. *GALACTIA COMBSII* Urban, Symb. Ant. 2: 219. 1900

Grassy places, Santa Clara, Pinar del Rio. Endemic. Referred by Combs to *G. angustifolia* HBK.

7. *GALACTIA STRIATA* (Jacq.) Urban, Symb. Ant. 2: 320. 1900

Glycine striata Jacq. Hort. Vind. 1: 32. pl. 76. 1770.

Galactia cubensis HBK. Nov. Gen. 6: 429. 1823.

Galactia Berteriana DC. Prodr. 2: 238. 1825.

Galactia striata cubensis Urban, Symb. Ant. 2: 322. 1900.

Galactia striata Berteriana Urban, loc. cit. 1900.

Thickets and hillsides at lower elevations, all provinces and Isle of Pines: Jamaica; Hispaniola; Porto Rico; continental tropical America. Recorded by Grisebach and by Wright as *G. filiformis* Benth. Some Cuban specimens with short-peduncled inflorescence are only with difficulty separable from the following species. Races differ in pubescence.

8. *GALACTIA SPICIFORMIS* T. & G. Fl. N. A. 1: 288. 1838

Thickets, Cays of Camaguey: southern Florida; Bahamas.

9. *Galactia Earlei* sp. nov.

Stem slender, somewhat woody, twining, finely appressed-pubescent 5 dm. long or longer. Stipules lanceolate-subulate, about 2 mm. long; petioles slender, sparingly pubescent, 3 cm. long or less; leaflets 3, oblong or elliptic, 1.5–3 cm. long, 8–15 mm. wide, glabrous and shining with the midvein impressed above,

sparingly appressed-pubescent beneath, revolute-margined, obtuse or slightly emarginate at the apex, rounded at the base, the terminal one with a petiolule 4–8 mm. long, the lateral ones nearly sessile; inflorescence stalked, slender, many-flowered, 6–12 cm. long, densely brownish-pubescent; flowers clustered, almost sessile; calyx 6–7 mm. long, densely brownish appressed-pubescent, its teeth longer than the tube, the upper one ovate, the others lanceolate; standard clawed, nearly orbicular, 7 mm. long.

Pine woods, Baracoa, Oriente (*Underwood & Earle 1342*).

11. *Galactia Jenningsii* sp. nov.

A very slender, slightly woody vine, the branches 1.5–3.5 dm. long, loosely pilose or glabrate. Stipules subulate, striate, about 1 mm. long; petioles slender, pilose, 3–10 mm. long; leaflets 3, nearly equally short-petioluled, obovate, oblong or oblong-obovate, subchartaceous, 6–20 mm. long, rounded or emarginate at the apex, rounded or narrowed at the base, pubescent on both sides, strongly reticulate-veined above; peduncles axillary, 1- to few-flowered, as long as the petioles or shorter; calyx pilose, about 6 mm. long, its lanceolate acuminate lobes about as long as the tube or a little longer; flowers purple; standard suborbicular, clawed, 7–8 mm. long; wings narrowly oblong, about as long as the standard; pod linear, short-beaked, appressed-pubescent, sessile in the calyx, 2.5 cm. long, 5 mm. wide.

White-sand pine-barrens, Isle of Pines, scarce and local (*Britton & Wilson 14,186*, type; *O. E. Jennings 350*).

10. GALACTIA BRACHYODON Griseb. Mem. Am. Acad. II. 8: 178.
1860

Near Monte Verde, Oriente. Endemic.

12. GALACTIA REVOLUTA Urban, Symb. Ant. 2: 333. 1900

Dry hillsides, northern Oriente. Endemic.

13. GALACTIA GALACTIOIDES (Griseb.) Hitchc. Rep. Mo. Bot.
Gard. 4: 77. 1893

Dioclea galactioides Griseb. Cat. Pl. Cub. 76. 1866.

Galactia impressa C. Wright; Sauvalle, Anales Acad. Habana 5:
337. 1869.

Near Bahia Honda, Pinar del Rio, collected only by Wright.
Endemic. Erroneously recorded from the Bahamas.

14. *Galactia savannarum* sp. nov.

A slender, somewhat woody vine, 6 dm. long or longer, rather densely pubescent with brownish reflexed hairs, or the older parts glabrate. Stipules lanceolate, acuminate, 1–2 mm. long; petioles slender, 5–10 mm. long; leaflets 1 or 3, oblong, oblong-lanceolate, or the terminal one oblong-ob lanceolate, subcoriaceous, revolute-margined, 1–3 cm. long, 6–12 mm. wide, glabrous on both sides or with some scattered hairs beneath, obtuse or emarginate at the apex, rounded at the base, the pubescent petiolules equal, about 1.5 mm. long; inflorescence interruptedly spicate, slender, 5–12 cm. long, densely appressed-pubescent; flowering pedicels 0.5 mm. long or less; calyx 4–5 mm. long, appressed-pubescent, its lobes about equalling the tube; flowers blue-purple, about 8 mm. long; standard suborbicular, clawed, about 6.5 mm. broad; wings and keel nearly equal in length; pod borne on a pedicel about 1.5 mm. long, linear, acute, densely villous, 2.5–3 cm. long, 7 mm. wide.

Barren savannas, Oriente, Camaguey, Santa Clara. Type from savanna southeast of Holguin, Oriente (*Shafer 1237*).

15. GALACTIA JUSSIAEANA Kunth, Mimos. 196. 1824

Clitoria glomerata Griseb. Cat. Pl. Cub. 74. 1866.

Pine-lands and plains, Pinar del Rio and Isle of Pines: Jamaica; Hispaniola; tropical South America. Common in pine-lands on the Isle of Pines, attaining a height of 6 dm.

47. THE GENUS MACHAONIA H. & B. IN CUBA

Type species: *Machaonia acuminata* H. & B.

Fruit essentially glabrous.

Fruit constricted below the middle.

1. *M. pauciflora*.

Fruit gradually narrowed to the base.

2. *M. littoralis*.

Fruit pubescent.

Fruit sparingly pubescent, the persistent calyx-lobes long.

3. *M. trifurcata*.

Fruit densely pubescent, the persistent calyx-lobes short.

Fruit broadly obpyramidal, 2.5 mm. long.

4. *M. microphylla*.

Fruit narrowly obpyramidal, 3–4 mm. long.

5. *M. calcicola*.

1. MACHAONIA PAUCIFLORA Urban, Symb. Ant. 5: 512. 1908

The species is based on part of *C. Wright's 433*, collected, presumably, in Oriente, and has not been found by us.

2. *Machaonia littoralis* sp. nov.

A shrub, about 2 m. high, with slender branches, the young twigs short-pilose, leafy to their tips. Leaves rhombic-ovate to

elliptic, 6–10 mm. long, subcoriaceous, entire, 7 mm. wide or less, abruptly acute, obtuse, or some of them rounded at the apex, narrowed at the base, glabrous, pinnately few-veined, the glabrous or somewhat pubescent petioles 0.5–1 mm. long; inflorescence corymbose-cymose, several-flowered; pedicels very slender, sparingly pubescent, 1–2 mm. long; fruit narrowly obpyramidal, sparingly papillose or glabrous, 2 mm. long, 1 mm. thick at the top, evenly gradually narrowed to the rounded base, the persistent calyx-lobes ovate or ovate-lanceolate, about 0.5 mm. long.

Coastal thickets, vicinity of Siguanea, Isle of Pines, Cuba (*Britton & Wilson 14942.*)

3. *MACHAONIA TRIFURCATA* Urban, *Symb. Ant.* 5: 512. 1908

Cuba (*C. Wright 2760*). Referred by Grisebach to the Jamaican *M. cymosa* Griseb., but clearly different from that species. Not found by us. A part of *C. Wright 433* in the herbarium of the New York Botanical Garden has the characters of this species.

4. *MACHAONIA MICROPHYLLA* Griseb. *Mem. Am. Acad.* II. 8: 510. 1862

Rocky hills at lower elevations in dry districts, province of Oriente.

A barren specimen, collected in the palm barren near the city of Santa Clara, Santa Clara province (*Britton & Wilson 6130*) is doubtfully referred to this species.

5. *Machaonia calcicola* sp. nov.

?*Spermacoce spinosa* Jacq. *Stirp. Am.* 21. 1763. Not L. 1762.

Not *Machaeonia spinosa* C. & S.

?*Spermacoce havanensis* Jacq.; Gmel. *Syst.* 234. 1796.

A much-branched shrub or small tree up to 3 m. high, the slender twigs densely puberulent, bristle-tipped. Leaves ovate or rhombic-ovate to elliptic or oblong-lanceolate, 6–15 mm. long, acute, short-acuminate, or some of them obtuse at the apex, narrowed or obtuse at the base, glabrous, pinnately few-veined, the short petioles puberulent; inflorescence corymbose-cymose, several-to many-flowered; pedicels slender, pubescent, 1–2 mm. long, calyx densely pubescent, its ovate or ovate-lanceolate lobes as long as the tube or somewhat shorter; corolla white or yellowish, about 1 mm. long, its ovate-oblong obtuse lobes about as long as the

tube; stamens shorter than the corolla; fruit obpyramidal, 3-4 mm. long, 1.5 mm. thick at the top, tapering gradually to the base, densely pubescent, the persistent calyx-lobes about 0.5 mm. long.

Limestone rocks, northern parts of Havanna and Pinar de Rio. Type from coastal hillside, Bay of Mariel, Pinar del Rio (*Britton & Earle 7619*).

A barren specimen from limestone rocks at Cape Corrientes (*Britton & Cowell 9894*) is doubtfully referred to this species.

48. THE GENUS HEPTANTHUS GRISEB.

A Cuban genus, of which three species were described at the place of original publication (*Cat. Pl. Cub. 148. 1866*); all were from western Cuba, *H. cochlearifolius* Griseb. being typical, and none have since been added to the genus. I now propose three others, all from eastern Cuba.

Leaf-blades glabrous above or merely puberulent.

Peduncles longer than the leaves.

1. *H. cochlearifolius*.

Peduncles shorter than the leaves.

Leaf-blades orbicular-ovate, 1-2 cm. long; petioles densely villous.

2. *H. cordifolius*.

Leaf-blades triangular-ovate, 4-6 mm. long; petioles sparingly villous.

3. *H. Shaferi*.

Leaf-blades pubescent on both surfaces.

Leaf-blades repand-dentate; peduncles much shorter than the petioles.

4. *H. brevipes*.

Leaf blades incised-serrate or lobed; peduncles as long as the leaves or longer.

Leaf-blades 12 mm. long or less, incised-serrate.

5. *H. ranunculoides*.

Leaf-blades 1-2.5 cm. long, deeply 3-lobed, the lobes coarsely few-toothed.

6. *H. lobatus*.

1. HEPTANTHUS COCHLEARIFOLIUS Griseb. *Cat. Pl. Cub. 148. 1866*

TYPE LOCALITY: Western Cuba.

DISTRIBUTION: Pine-lands and savannas, Pinar del Rio.

The upper leaf-surfaces are glabrous or nearly so.

A plant related in leaf-form, but with the upper leaf-surfaces densely puberulent is common in pine-lands and white sand in the central districts of the Isle of Pines, but could not be found in flower during our visit to this region in February and March, 1916 (*Britton & Wilson 14163*); it is therefore referred to this species with doubt.

2. **Heptanthus cordifolius** sp. nov.

In habit and aspect similar to *H. cochlearifolius*, forming cushion-like tufts 1–1.5 dm. broad. Petioles densely villous, 8 cm. long or less; leaf-blades orbicular-ovate, 1–2 cm. long, nearly or quite as wide as long, repand-dentate, rounded or obtuse at the apex, cordate at the base, distinctly punctate, glabrous above, villous on the few veins beneath; peduncles filiform, sparingly villous, shorter than the petioles; involucre campanulate, about 5-flowered; flowers white.

In damp soil among stones at edge of low thicket in deciduous woods near the base of Loma Mensura, Oriente, about 680 m. alt. (*Shafer 3786*).

3. **Heptanthus Shaferi** sp. nov.

Forming small tufts 4–6 cm. broad. Petioles filiform, loosely villous, 4 cm. long or less; leaf-blades triangular ovate, 4–6 mm. long, rather sharply few-dentate, bluntly acute at the apex, cordate at the base, distinctly punctate, glabrous on both sides or with a few hairs on the veins beneath; peduncle filiform, loosely villous, about 2.5 cm. long; involucre narrowly campanulate, 4-flowered, about 1.5 mm. long.

On bank of a stream, Camp La Gloria, south of Sierra Moa, Oriente (*Shafer 8217*).

4. **HEPTANTHUS BREVIPES** Griseb. Cat. Pl. Cub. 148. 1866

TYPE LOCALITY: Low riparian woods near Toscano [Pinar del Rio].

DISTRIBUTION: Known only from the type locality and from the original collection (*Wright 2821*).

5. **HEPTANTHUS RANUNCULOIDES** Griseb. Cat. Pl. Cub. 148.
1866

TYPE LOCALITY: Western Cuba.

DISTRIBUTION: Known only from the original specimens (*Wright 2820*).

6. **Heptanthus lobatus** sp. nov.

Densely tufted, the tufts 1–1.5 dm. broad. Petioles densely villous, 7.5 cm. long or less; leaf-blades broadly ovate or orbicular-ovate in outline, pubescent with long hairs on both surfaces, 1–2.5 cm. long, deeply 3-lobed, the lobes coarsely few-toothed, the middle one obovate-cuneate, obtuse; peduncles filiform, loosely

villous, as long as the petioles or longer; involucre narrowly campanulate, about 3 mm. long, several-flowered; flowers white.

Sandy bank, alluvial valley of Rio Yamanigüey, Oriente (*Shafer 4201*).

49. UNDESCRIBED SPECIES FROM PORTO RICO

***Malpighia Shaferi* Britton & Wilson, sp. nov.**

A shrub 2–2.5 m. tall, with grayish-brown twigs. Leaves oblong-elliptic to elliptic or somewhat oblong-lanceolate, 13–17 cm. long, 4.5–8.5 cm. broad, acute, or rounded and mucronate, or occasionally retuse at the apex, more or less inequilateral and acute or rounded at the base, reticulate-veined above, armed beneath with closely-appressed stinging hairs, the margin somewhat revolute; petioles stout, 8–12 mm. long; cymes nearly sessile; pedicels 8–18 mm. long; sepals elliptic to broadly ovate, 2–3 mm. long, 1.2–1.5 mm. broad; glands fully one half the length of the sepals; larger petals 10–11 mm. long, the blades 6 mm. broad, pink, prominently keeled on the back; stamens unequal; anthers cordate; styles unequal, the anterior one slightly shorter than the posterior ones; fruit red.

Type collected in the vicinity of Isabel Segunda, Vieques Island (*Shafer 2448*).

***Byrsonima ophiticola* Small, sp. nov.**

Tree up to 8 m. tall, the twigs with dark gray bark, the young tips with dark red pubescence. Leaves clustered at the ends of the twigs, 3–6.5 cm. long, the blades spatulate to narrowly obovate, rounded or obtuse at the apex, closely and finely pubescent when young, sparingly pubescent when full-grown, dull, paler green beneath than above, acute or acuminate at the base, rather long-petioled; panicles 5–9 cm. long, the bracts less than 3 mm. long; pedicels closely pubescent, at least in anthesis; sepals ovate or oblong-ovate, 2.5–3 mm. long, obtuse or acutish, the glands mostly less than one half as long as the sepal-body; petals yellow, turning to scarlet, 8–10 mm. long, the blade broadly reniform or orbicular-reniform, 7–8 mm. wide, the claw shorter than the blades; drupes not seen.

Serpentine slopes, Guanajibo near Mayaguez (*Britton, Cowell, & Brown 4350*). Related to *Byrsonima lucida* DC., from which it differs in the longer petioles, larger panicles, and larger flowers. The petals besides unfolding yellow and turning scarlet, have relatively shorter claws and more broadly reniform blades than in *B. lucida*, and are of very firm texture and more persistent.

Chamaesyce Cowellii Millspaugh, sp. nov.

A small, prostrate, glabrous annual, many-stemmed from the rootstalk; stems short; branches filiform, 2–3 cm. long; nodes swollen and prominent. Inflorescence solitary in the upper axils. Leaves thick, succulent, ovate, entire, blunt, $2-3.5 \times 1.5-2$ mm., strongly inequilateral at the oblique and but slightly cordate base, petiolate; stipules various, those of the upper surface mostly quadrilateral and often bilobed, others triangular, all lacerate; those of the under surface of the branches formless in laceration. Involucres turbinate, short-pedunculate, glabrous without, densely woolly within; lobes triangular, aristate, densely ciliate; sulcus shallow, inconspicuous, flanked by two minute lobes similar in form to the others; glands green, flattened parallel to the walls of the involucre; appendages narrow, greenish, crenate, about half the width of the glands. Capsule glabrous, deeply sulcate; seeds pink, ovate-quadrangular, the dorsal angle most prominent, 1×0.6 mm., the facets finely and anastomosingly transverse-ridged in a central longitudinal line. Allied to *Chamaesyce serpens* (HBK.) Small.

Collected from the crevices of limestone rocks at Cayo Muertos (Britton, Cowell & Brown 5007). Type, sheet No. 427101, in the herbarium of the Field Columbian Museum.

Sebesten brachycalyx (Urban)

Cordia Sebestena brachycalyx Urban, Symb. Ant. 1: 389. 1899.

This tree, first made known from the southern and eastern coasts of Porto Rico, appears to differ specifically from the related *Sebesten Sebestena* (L.) Britton (*Cordia Sebestena* L.) of wide distribution in the West Indies, Florida and tropical continental America, and there much planted for ornament. *S. brachycalyx* has much rougher upper leaf-surfaces and a much smoother calyx than *S. Sebestena* (often glabrous), and its yellow or orange fruit is shorter-beaked than the white fruit of that species; the corolla of *S. brachycalyx* has a narrower limb than that of *S. Sebestena*. The species inhabits Porto Rico, Vieques, Culebra, and Buck Island, St. Thomas.

Crescentia portoricensis sp. nov.

A vine-like, glabrous shrub, with long, slender branches, the bark light gray. Leaves elliptic-obovate, fascicled at the nodes, 15 cm. long or less, 2–8 cm. wide, coriaceous, shining above, dull beneath, strongly reticulate-veined on both sides, abruptly short-

acuminate at the apex, cuneate at the base, the slender petioles 6–12 mm. long; peduncle 1–2 cm. long, slender in flower, much thickened in fruit; calyx 2 cm. long, deeply 2-lobed; corolla subcampanulate, 4 cm. long, yellowish white, reticulate-veined, its broadly ovate, entire, acute or blunt lobes about one fourth as long as the tube; fruit narrowly oblong, 10 cm. long, 3.5 cm. in diameter, terete, pointed at the apex, truncate at the base.

River-valley forests, mountains of western Porto Rico. Type from Rio de Maricao, 500–600 m. alt. (*Britton, Stevens & Hess 2455*).

***Mikania Stevensiana* sp. nov.**

Climbing to a height of 5 m., the branches glabrous, striate, nearly terete, the twigs angular, sparingly pubescent. Leaves triangular-ovate in outline, firm in texture, brittle when dry, 5 cm. long or less, very scabrous and sparingly short-hispid above, pubescent on the elevated veins beneath, 5-nerved, sharply 3-lobed, the middle lobe triangular-lanceolate, long-acuminate, dentate, 3 or 4 times as long as the acute, entire or sparingly toothed, lateral ones; petioles sparingly pubescent, 1–2 cm. long; inflorescence corymbose-paniculate; heads peduncled; bracts of the involucre linear, acute, 7 mm. long; achenes angled, glabrous, 5 mm. long; pappus-bristles about 40; corolla 7 mm. long, as long as the pappus, its lobes acute.

Wooded valley, Maricao River, above Maricao (*Britton & Cowell 4225*, type; *Britton, Stevens & Hess 2439*).

50. UNDESCRIBED SPECIES FROM CUBA

***Schoepfia cubensis* Britton & Wilson, sp. nov.**

A slender, glabrous shrub, 2.5–4 m. tall, the young twigs compressed, longitudinally ridged, often flexuose, glabrous. Leaves elliptic to oval, 2–3.4 cm. long, 1.5–2.8 cm. broad, short-petioled, entire, glabrous, rounded at the apex, equilateral and rounded or occasionally subcordate at the base, lustrous and rather indistinctly veined on both surfaces; principal veins 5 or 6 on each side of the midvein, strongly divergent; peduncles 0.8–1.2 cm. long; fruit sessile, ellipsoid, 8 mm. long, 7 mm. wide.

Camp La Gloria, Oriente (*Shafer 8278*).

***Cassia scleroxyla* sp. nov.**

A slender tree, about 8 m. high, with smooth bark and exceedingly hard wood, the young twigs loosely appressed-pubescent.

Leaves glandular, 8–10 cm. long; petiole and rachis grooved above, sparingly appressed-pubescent; petiole 1–2 cm. long; leaflets 6–8 pairs, linear-lanceolate, chartaceous, 2–4 cm. long, acute and mucronate at the apex, rounded or narrowed at the base, rather dark green and glabrous above, pale green and sparingly pubescent beneath, the pubescent petiolules about 2 mm. long; flowers loosely corymbose; pedicels slender, puberulent, about 1 cm. long; sepals very unequal, sparingly pubescent, ciliate, the larger ones 4–5 mm. long; petals bright yellow, the larger 6–7 mm. long; perfect anthers 7, about 3 mm. long; pod linear, glabrous, 3–4.5 cm. long, 6–7 mm. wide, reticulate-veined, abruptly acute, septate between the seeds.

Hillside, Berraco, near Daiquiri, Oriente (*Britton & Cowell 12664*).

Among West Indian species, perhaps most nearly related to *C. domingensis* Spreng.

***Cassia Shaferi* Britton & Wilson, sp. nov.**

Shrub 1 m. tall; twigs, petioles, rachis, and branches of the inflorescence hirsutulous. Leaves 6.5–10 cm. long, glandular, the gland slender, 1.5–2 mm. high, acutish or obtuse, situated either between the leaflets of the lowest pair or below on the petiole; petioles and rachis grooved; stipules narrowly oblong-lanceolate, 6–7 mm. long, acuminate; leaflets 4–6 pairs, oblong to elliptic, 1.5–3 cm. long, 7–12 mm. broad, rounded and mucronulate at the apex, rounded and very inequilateral at the base, sparingly hirsutulous on the midrib above, hirsutulous beneath, the hairs scattered and mostly appressed, short-petiолuled; margin thickened, ciliate; pedicels hirsutulous; buds subglobose; sepals densely hirsutulous; pod flat, 11 cm. long, 9 mm. broad; seeds 3.5–4.5 mm. long.

Pine-lands near the base of Loma Mensura, Oriente (*Shafer 3770*); also collected in open places at base of Loma Mensura (*Shafer 3803*).

Apparently closely related to *Cassia bahamensis* Mill.

***Pachyanthus reticulatus* Britton & Wilson, sp. nov.**

A shrub 1–1.5 m. tall; young twigs compressed, more or less grooved, ferruginous, stellately scabrous-puberulent. Leaves ovate, 9–12 cm. long, 5–7 cm. broad, obtuse at the apex, cordate at the base, above densely ferruginously stellate-puberulent when young, glabrescent, lustrous and dark green in age, the venation strongly impressed, below pale brown, reticulate-veined and

densely stellate-canescens, prominently 5-nerved; petioles 1.5–2.5 cm. long; flowers sessile, calyx campanulate, densely stellate-tomentulose, the lobes 5, deltoid at the base, linear above, 5–6 mm. long.

Low dry thickets, pine-lands, Sierra Nipe, near Woodfred, Oriente (*Shafer 2967*).

***Labatia aristata* Britton & Wilson, sp. nov.**

A much-branched shrub, 2–3 m. high, the branches rigid, gray, the young twigs appressed-pubescent. Leaves broadly ovate to suborbicular, 2–3.5 cm. long, coriaceous, glabrous, strongly pinnately and reticulate-veined, dark green and shining above, dull green beneath, aristate at the apex, rounded or subcordate at the base, the yellowish green, rather stout petioles 5–10 mm. long; pedicels solitary or several together, slender, glabrous, 5–8 mm. long; calyx sparingly pubescent, 2.5–3 mm. long, deeply 4- to 5-lobed, the lobes lanceolate or oblong-lanceolate, acutish, scarcely imbricated; corolla green, about 2.5 mm. long, 4–5-lobed to about the middle, the lobes rounded, slightly imbricated; anthers oblong, a little longer than the filaments; staminodia obovate, somewhat longer than the filaments; drupe oval, dark purple, 2.5 cm. long, its flesh very thin; seeds 2, oblong.

Coastal hills and thickets, provinces of Oriente, Santa Clara and Havana, Cuba; type collected between the Rio Chorrera and Marianao, Havana (*Brother Leon 6230*).

***Tournefortia Earlei* sp. nov.**

A shrub, 1–2 m. high, with long, slender branches, or vine-like and 3 m. long, the branches densely pubescent with short, soft, appressed hairs. Leaves narrowly linear, or linear-lanceolate, 3–7 cm. long, 2–6 mm. wide, acute or bluntish at the apex, densely appressed-pubescent above, densely white-tomentulose beneath, the petioles 1.5–3 mm. long; cymes short-peduncled, their few, very slender branches 2–4 cm. long; calyx 1 mm. long, appressed-pubescent, its lanceolate or ovate-lanceolate lobes acute; corolla-tube about 2 mm. long, the narrowly lanceolate lobes about as long; fruit depressed, 4 mm. broad, about one half as high as broad, glabrous.

Hillsides, Guantanamo Bay and Santiago Bay, Oriente. Type from Guantanamo Bay (*F. S. Earle 82*). Related to *T. incana* Lam. and *T. stenophylla* Urban.

***Cestrum pinetorum* sp. nov.**

A glabrous shrub, about 1 m. high, with slender branches. Leaves narrowly oblong to oblong-lanceolate, 7 cm. long or less, 6–16 mm. wide, rather thin in texture, faintly shining, bluntly acute at the apex, narrowed at the base, the midvein slender above, prominent beneath, the lateral veins few, obscure, the slender petioles 3–5 mm. long; clusters axillary, few- to several-flowered; fruiting pedicels very short; fruiting calyx obconic-campanulate, about 5 mm. long, its triangular-ovate teeth acutish, about one third as long as the tube; berry globose-ovoid, purplish, about 7 mm. long.

Open pine-woods Sierra Nipe near Woodfred, Oriente, 500–650 m. alt. (*Shafer 3031*, type; *3591*).

***Casasia parvifolia* sp. nov.**

A much-branched shrub, about 2 m. high, the twigs slender, puberulent when young. Stipules lanceolate, acute, about 3 mm. long. Leaves glabrous, oblong-spatulate, 3 cm. long or less, 5–8 mm. wide, obtuse or acutish at the apex, narrowed or cuneate at the base, coriaceous, clustered at the ends of the twigs, pinnately few-veined, shining and with impressed midvein above, the midvein very prominent beneath, the petioles about 1 mm. long; fruit terminal, solitary, sessile, globose, warty, about 10 mm. in diameter.

Rocky river-banks, mountains of northern Oriente; type collected between Camp La Barga and Camp San Benito, 450–900 m. alt. (*Shafer 4100*).

***Baccharis Shaferi* sp. nov.**

A glabrous shrub, 6 dm. high or less, with slender ascending branches, the twigs angled. Leaves triangular-cuneate, 6–12 mm. long, 7 mm. wide or less at the truncate or subtruncate apex, bright green and shining above, dull and whitish-papillose beneath, the slender midvein slightly elevated on both sides, the lateral veins 1–3; heads sessile, solitary or 2 or 3 together at the ends of short twigs, or in the axils; young involucre about 4 mm. long, the ovate, acute bracts imbricated in about 4 series.

Dry pine woods, Arroyo del Medio above the falls, 450–550 m. alt., Oriente (*Shafer 3257*, type); specimens from Camp La Gloria, south of Sierra Moa, Oriente (*Shafer 8213*), have longer leaves than the type specimens.

51. UNDESCRIBED SPECIES FROM THE ISLE OF PINES,
CUBA***Zamia silicea* sp. nov.**

Caudex slender, completely buried in sand, 2 dm. long or longer. Basal scales lanceolate, villous, 1-2 cm. long; leaves glabrous or the base of the petiole villous, spreading or ascending, 1-4 dm. long; leaflets 30 or fewer, coriaceous, shining, many-veined, obovate-oblongate, 3-6 cm. long, 2 cm. wide or less, rounded or obliquely subtruncate and callously denticulate at the apex, narrowed at the base; peduncles densely short-pubescent, 2-4 cm. long; male cone cylindric, about 3 cm. long and 1.3 cm. thick, its scales densely pubescent, hexagonal, the upper and lower ones about as wide as high, the middle ones nearly twice as wide as high; ripe pistillate cones ellipsoid, short-tipped, 5-6 cm. long, about 2.5 cm. thick, the hexagonal scales puberulent, seeds red, about 12 mm. long, broadly grooved on the inner side, rounded on the back, obliquely and obtusely umbonate at the apex.

Frequent in pine-lands and in white silicious sand. Type from near Los Indios (*Britton & Wilson 14166*).

***Cyperus pinetorum* sp. nov.**

Perennial by short rootstocks; culms tufted, stiff and wiry, compressed, 1.5-2.5 cm. high. Basal sheaths striate-veined, acute, 2-4 cm. long; involucre leaves 1 or 2, nearly subulate, 0.5-3 cm. long; spikelets linear, 10-22 mm. long, 1.5 mm. wide, digitate, one cluster subtended by the involucre leaves with usually a similar one on a slender ray 4 cm. long or less; scales elliptic, obtuse, mucronulate, yellowish-brown, 1.5 mm. long; achene sharply trigonous, about 0.6 mm. long, nearly as thick as long, often persistent on the rachis after the scales have fallen away.

White sand pine barrens. Type from the vicinity of Los Indios (*Britton and Wilson 14170*).

Related to *C. Haspan* L., differing in broader spikelets, broader scales and proliferous inflorescence.

***Xyris longibracteata* Britton & Wilson, sp. nov.**

Annual(?); leaves erect, linear, 8-10 cm. long, 1-1.5 mm. broad, occasionally somewhat spirally twisted, the margin rough; scapes several, erect, glabrous, 15-18 cm. tall, terete or nearly so; involucre subtending the spike composed of several bracts of unequal length, each tapering abruptly into a long, linear tip, the longest bract often exceeding the spike; spikes ellipsoid to ovoid, 7-9 mm.

long, 4–6 mm. broad; bracts ovate to orbicular-ovate, 4–5 mm. long, 3.5–4 mm. broad, acute at the apex; lateral sepals included; keel toothed from the apex to below the middle; petals broadly obovate, 5 mm. long, 3.5–4 mm. broad.

White sand, vicinity of Los Indios, Isle of Pines (*Britton, Britton & Wilson 14215*).

***Chamaecrista micrantha* sp. nov.**

Stems several from a woody root, ascending or suberect, few-branched or simple, slender, villous, 2–3 dm. long. Stipules lanceolate acuminate, 2.5–4 mm. long; leaves 8–18 mm. long; petiolar gland short-stalked; rachis villous; leaflets 10–24, oblong, villous, 3–3.5 mm. long, mucronulate, the midvein very excentric; peduncles very slender, villous, 6–15 mm. long; sepals lanceolate, acute, villous, about 4 mm. long; petals rounded, 5 mm. long; pod linear, finely pubescent, 2–3 cm. long, 3–4 mm. wide.

Pine-lands and savannas, Pinar del Rio and Isle of Pines, Cuba. Type collected near San Pedro, Isle of Pines (*Britton & Wilson 14294*). Referred by Grisebach to *Cassia pygmaea* DC., and taken up by Bentham under *Cassia procumbens* L., but the type of *C. procumbens* is the same as *C. nictitans* L.

***Chamaecrista savannarum* sp. nov.**

Stems several from a deep woody root, slender, ascending or erect, short-pubescent, 2–4 dm. high, simple or little-branched. Stipules lanceolate or ovate-lanceolate, 2–4 mm. long, acuminate, strongly veined; leaves 2.5 cm. long or less, the rachis pubescent; petioles 2–4 mm. long, bearing a scutellate, sessile or very short-stalked gland; leaflets 3–13 pairs, appressed-pubescent or glabrate, oblong or linear-oblong, 3–7 mm. long, somewhat oblique, aristulate, the midvein very excentric; peduncles slender or nearly filiform, 8–20 mm. long; sepals lanceolate, acuminate, slightly pubescent, 4–5 mm. long; petals 7–8 mm. long; pod linear, sparingly pubescent, 3–4 cm. long, 4 mm. wide.

Savannas and pine-lands, Pinar del Rio and Isle of Pines, Cuba. Type collected near Siguanea, Isle of Pines (*Britton & Wilson 14379*).

***Bauhinia Jenningsii* P. Wilson, sp. nov.**

A slender shrub or tree, sometimes 5 m. high; young twigs, branches of the inflorescence, under surface of the leaves and pods finely puberulent with minute, mostly appressed hairs; petioles

1.5–2 cm. long; leaves lanceolate-ovate to oblong-ovate or ovate, 7–14 cm. long, 2.5–5 cm. broad, acute at the apex, subtruncate or rounded at the base, 5-nerved, finely reticulate-veined and glabrous above, reticulate-veined and minutely papillose beneath; inflorescence corymbose; flowers long-pedicelled; calyx scarlet, puberulent with appressed hairs; petals lanceolate or occasionally somewhat oblanceolate, 1.2–1.6 cm. long, 2–2.7 mm. broad; sterile stamens 9, half as long as the fertile stamen; ovary stipitate; pods oblong, 5–9 cm. long, 0.8–1.5 cm. broad, brown; seeds oblong-elliptic to elliptic, 7–8 mm. long, 5–5.5 mm. broad, brownish black.

Wooded limestone plain, Coe's Camp, Ensenada de Sigüanea (*Britton & Wilson 14851*, type); coastal plain, San Juan (*Britton & Wilson 15544*); coral soil, north of Caleta Grande (*O. E. Jennings 480*).

***Savia perlucens* sp. nov.**

A shrub, about 2 m. high, the slender branches terete, grey. Stipules ovate, acute; leaves obovate or elliptic-obovate, coriaceous entire, 9 cm. long or less, acute or acuminate at the apex, obtuse or acute at the base, bright green and strongly shining above, dull green beneath, the midvein prominent above and beneath, both surfaces reticulate-veined; flower-clusters supra-axillary, depressed, about 3 mm. broad, puberulent.

Limestone plain, Caleta Grande (*Britton, Wilson & Leon 15330*).

***Phyllanthus nanus* Millspaugh, sp. nov.**

A low, spreading, glabrous perennial, about 5 cm. in extent, with thick, strongly imbricated leaves. Root thick, branching, giving off a mass of thread-like rootlets. Stems many, springing from the rootstalk, very short (1–1.5 cm.); branches diffuse, rather thick and striate, 1–2 cm. long. Inflorescence dioecious, biflorate, in the axils of the apical leaves of the short branchlets. Leaves thick, glabrous, ovate, cordate, acute, entire, 1.3×1–2.3×1.75 mm.; petioles very short; stipules entire, aristate from a deltoid base, the upper half withered to a dark brown color. Flowers sessile or nearly so; sepals 5, equal, ovate, acute, strongly striate-keeled; glands 5, verrucoid, minute; staminal column twice the length of the anthers; anthers 2, transversely connate in an apical ring; female calyx as in the male but nearly twice the size; ovary 3-carpelled, 6-celled, nearly sessile; styles 3, short, bifid to half their length, the stigmatic apices cleaveate; capsule depressed-globose, glabrous; seeds dark brown, sharply angled, 0.9×0.75 mm. dorsal facet minutely and closely transverse anastomose-wrinkled.

In white sand in the vicinity of Los Indios (*Britton & Wilson*

14192). Type sheet in the herbarium of the Field Columbian Museum.

***Chamaesyce Jenningsii* Millspaugh, sp. nov.**

Prostrate, spreading from a low rootstock; stems many, divaricately branching, internodes about 1.5–3 cm.; branches 2 to many at each swollen node, wiry, divergently forking; leaves oval to ovate, 5×3 – 8×4 mm., glabrous above, finely long silvery-pubescent beneath, obliquely cordate, blunt, shallowly but sharply serrate throughout the margins. Inflorescence solitary in the terminal forks and axils; involucre long-turbinate, glabrous without, hairy within; pedicels about twice the length of the tube; lobes triangular; sulcus large, deep, triangular, the fundus unoccupied; glands nearly circular, flattened to the walls of the involucre; appendages none, or rarely merely a marginal line of the same color and texture as the glands; bracteoles as many as the stamens, ligulate, transparent. Capsule glabrous, ovoid; carpels strongly keeled; seeds ovate-quadrangular, 1.2×1 mm., angles sharp, facets sharply and anastomosely transverse ridged including deep, quadrangular pits.

Vivijagua (*O. E. Jennings 621*); type in the herbarium of the Carnegie Museum, Pittsburgh, Pennsylvania. Also in coastal sands at the same place (*Britton & Wilson 14690*).

***Tapura obovata* Britton & Wilson, sp. nov.**

A tree 10 m. tall; young twigs and petioles minutely strigillose; leaves obovate, 3.5–7 cm. long, 1.5–4.4 cm. broad, rounded at the apex, cuneate to rounded-cuneate at the base, dull above, lustrous beneath and reticulate-veined, glabrous, short-petioled; flowers short-pedicelled; calyx-lobes 5, ciliate, sparingly appressed-pilose on the outside, the two outer lobes smaller than the three inner ones, broadly oblong-elliptic to oval, 2.5–3.2 mm. long, 2–2.2 mm. broad, the three inner lobes oval to suborbicular, 3.4–3.8 mm. long, 3–3.3 mm. broad; corolla-lobes 5, unequal, the three smaller lobes spatulate-obovate, 4–4.6 mm. long, 1.2 mm. broad, the two larger lobes spatulate, 4.6–5 mm. long, 2.2–2.5 mm. broad; filaments lanceolate-oblong to oblong; ovary pilose; style filiform, pilose, 3-lobed.

Savanna, Vivijagua (*Britton & Wilson 15607*, type); coastal plain, San Juan (*Britton & Wilson 15524*).

***Calyptanthus pinetorum* Britton & Wilson, sp. nov.**

A depressed, glabrous, much-branched shrub 6 dm. high or less, 3–10 dm. broad, the twigs stout, gray, terete or nearly so. Leaves

opposite, thick-coriaceous, ovate to orbicular, flat, 1-3.5 cm. long, rounded or obtuse at the apex, cordate or subcordate at the base, bright green and shining above, pale green and dull beneath, densely punctate, the midvein prominent, the lateral veins faint, the stout petioles 1-2 mm. long; peduncles rather stout, somewhat longer than the leaves; inflorescence cymose, few- to several-flowered; young fruit sessile, subglobose, 2 mm. in diameter, the calyx-limb 2 mm. broad.

Pine-lands, central districts. Type from north of Los Indios (*O. E. Jennings* 390).

Related to *C. nummularia* Berg. of Hispaniola, *C. Maxoni* Britton & Urban of Jamaica, and *C. Boldinghi* Urban of St. Martin.

***Evolvulus arenicola* Britton & Wilson, sp. nov.**

A diminutive perennial, with a slender, woody root, the few or solitary, simple or few-branched stems slender, appressed-pubescent, 2-5 cm. long, ascending or nearly prostrate. Leaves ovate to elliptic, 9-15 mm. long, puberulent or glabrate above, appressed-pubescent beneath, mostly obtuse or rounded at both ends, the midvein faint, the lateral veins wholly obscure, the pubescent petioles 1-2 mm. long; flowers 1 or 2 at the ends of the stems or branches; pedicels 5-8 mm. long, pubescent; sepals linear-lanceolate, acuminate, villous, 5 mm. long; corolla white, rotate, 9-12 mm. broad; obscurely lobed; stamens about one-half as long as the corolla; styles deeply 2-cleft; capsule subglobose, shorter than the sepals.

White sand, vicinity of Los Indios (*Britton & Wilson* 14190).

***Gerardia pinetorum* Britton & Wilson, sp. nov.**

Acaulescent; leaves elliptic-ovate to elliptic, 1.5-2 cm. long, 5-8 mm. broad, rounded at the apex, cuneate or somewhat rounded at the base, hispidulous above and below with jointed hairs; petioles 1-1.5 cm. long, densely hispidulous; scape erect, 4-8 cm. high, more or less hispidulous with jointed hairs, the spikes few-flowered, 1-2 cm. high, the bracts lanceolate, 4-5 mm. long, ciliolate, long-acuminate; calyx-lobes subequal, narrowly lanceolate, 4-4.5 mm. long, 0.5-0.8 mm. broad, ciliolate; corolla rose-pink, glabrous, the tube cylindric, 5-5.5 mm. long, the limb subequally 5-lobed, the lobes broadly obovate to somewhat oval-obovate, 4.5-8 mm. long, 2.5-5 mm. broad.

Along the Los Indios River above Los Indios (*O. E. Jennings* 456).

Rondeletia calcicola sp. nov.

A glabrous shrub about 2 m. high; the twigs slender. Leaves coriaceous, narrowly oblong to oblong-ob lanceolate, 5–13 cm. long, 8–18 mm. wide, shining above, dull beneath, acute at the apex, attenuate at the base into petioles about 1 cm. long or less, loosely reticulate-veined with the midvein prominent on the under surface; inflorescence terminal, few-flowered; fruiting pedicels rather stout, 3–7 mm. long; capsule oblong or oblong-obovoid, glabrous, 1 cm. long, about twice as long as thick; fruiting calyxlobes ovate-lanceolate, acute, 1–1.5 mm. long.

Wooded limestone plain, Coe's Camp, Ensenada de Siguanea (*Britton & Wilson 14842*).

Diodia ciliata Britton & Wilson, sp. nov.

Stems perennial, prostrate, 4–6 dm. or more in length, rooting and partly buried in sand, densely pilose with whitish hairs on the younger growth; leaves elliptic to somewhat elliptic-obovate, 1.5–3 cm. long, 7–14 mm. broad, acute at the apex, cuneate to broadly cuneate at the base, the margin conspicuously and densely ciliate with rather stiff white hairs, yellowish green and glabrous above, the midvein and lateral veins inconspicuous, whitish-pilose beneath, especially on the midvein, sessile; stipules ciliate; ovary 2-celled; fruit elliptic-obovoid, 3 mm. high, glabrous, or with few scattered appressed hairs on the back.

In white sand, vicinity of Los Indios (*Britton & Wilson 15347*).

Diodia arenicola Britton & Wilson, sp. nov.

Perennial; stems ascending, 1–1.5 dm. high, glabrous; leaves lanceolate, 6–14 mm. long, 2–3 mm. broad, acute at the apex, rounded or somewhat acutish at the base, glabrous or with few, stout, scattered, mostly appressed hairs above, glabrous beneath, sessile; stipules linear-lanceolate, 2 mm. long; calyxlobes triangular-ovate, ciliate; corolla 5 mm. high, the lobes ovate, obtuse; anthers ovate-lanceolate; style 3-lobed; fruit ellipsoid, 2.5 mm. high, 1.2 mm. broad, glabrous.

Along arroyo, Los Indios, Isle of Pines (*O. E. Jennings 355* in part, type); vicinity of Los Indios (*Britton & Wilson 15812*).

Mitracarpum depauperatum Britton & Wilson, sp. nov.

A diminutive, woody perennial, 2–5 cm. high, forming small tufts, the stems few-branched or simple, the internodes very short. Leaves narrowly linear, 6–15 mm. long, less than 1 mm. wide,

densely clustered, acute, sessile, glabrous; stipules deeply laciniate, about one-third as long as the leaves; calyx very small; corolla salverform, white, its tube cylindric, 2.5 cm. long, its limb spreading, 4-lobed, the lobes ovate, acute, nearly 1 mm. long.

Dry white sand, central districts; type from near Los Indios (*Britton & Wilson 14197*).

***Palicourea elongata* Britton & Wilson, sp. nov.**

A shrub 2 m. or more high; twigs, branches of the inflorescence, and pedicels minutely hispidulous with brownish hairs; leaves in whorls of threes, lanceolate or occasionally broadly oblanceolate, 12–19 cm. long, 4–6 cm. broad, acuminate at the apex, cuneate to somewhat rounded cuneate at the base, puberulent above on the midvein when young, puberulent beneath, especially on the midvein and lateral veins; stipules linear-lanceolate, 8–12 mm. long, ciliate; panicle elongate, 7–19 cm. high; calyx-lobes deltoid-ovate, ciliate; corolla puberulent, 7–10 mm. long, the lobes triangular-ovate; fruit broadly ovoid, 4–5 mm. long, 4–4.5 mm. broad, flattened.

Arroyo, Las Tunas (*Britton & Wilson 14749*, type); Arroyo, vicinity of San Pedro (*Britton & Wilson 15785*); Los Indios (*O. E. Jennings 332*).

***Elephantopus arenarius* Britton & Wilson, sp. nov.**

Plant 6–8 cm. high, the stem branching from the base; leaves cauline, linear, 2–4 cm. long, 1 mm. broad, involute, conspicuously ciliate at the broadened, clasping base with long hairs, entire; peduncles loosely hirsutulous, 2–3.5 cm. long; glomerules 5–6 mm. high; bracts broadly ovate to ovate-orbicular, cordate at the base with a linear, ligulate tip, 0.5–1 cm. long, reticulate-veined on the back, glabrous; scales acuminate, glabrous; achenes (immature) 2 mm. long; pappus-scales triangular to lanceolate, ciliate.

White sand, vicinity of Los Indios (*Britton & Wilson 14206*).

Closely related to *Elephantopus pratensis* C. Wright, but differing in the narrow involute leaves and linear ligulate tipped bracts.

***Erigeron purpuripes* Britton & Wilson, sp. nov.**

A low, scapose perennial. Leaves tufted, erect, the blades elliptic to oblong-obovate, 1–2 cm. long, pinnately few-veined, obtuse at the apex, narrowed at the base, ciliolate, puberulent or glabrate; petioles very slender, purple, 2 to 4 times as long as the blades; scapes nearly filiform, erect, appressed-pubescent, about

twice as long as the leaves; involucre 4 mm. high, subcylindric, its bracts in 2 or 3 series, linear, puberulent, the outer shorter than the inner; ligules white; disk-flowers tubular, 5-lobed, the lobes obtuse; achenes flattened, oblong or somewhat oblong-elliptic, minutely hispidulous; pappus-bristles in 1 series, barbellate.

In white sand, vicinity of Los Indios (*Britton & Wilson 14207*).

***Helenium scaposum* sp. nov.**

A low, pubescent, scapose perennial. Leaves several or many, densely tufted, short-petioled, oblong to spatulate, punctate, 1.5-3 cm. long, 6-10 mm. wide, rather strongly 5- to 7-nerved, entire or repand-dentate, obtuse or acute at the apex, narrowed or cuneate at the base; scapes rather stout, 5-11 cm. high; involucre about 5 mm. high; its bracts ovate-lanceolate, acute, appressed or little spreading; rays 10 to 12, bright yellow, obovate, 3-toothed, 5-8 mm. long; disk yellowish, depressed-globose, 8-12 mm. in diameter, its corollas 5-lobed, the lobes triangular-ovate; pappus scales of ray-flowers and disk-flowers alike, elliptic to obovate, lacerate, not aristate.

White sand pine-lands, west-central districts. Type from near Sigüanea (*Britton & Wilson 14346*).

A plant with quite the floral structure of *Helenium*, but its scapose habit is aberrant, resembling that of some *Tetrameuris* species.